

On *Colias hecla* Lefebvre re a recent paper by Oosting & Parshall (Lepidoptera: Pieridae)

In a recent paper on the butterflies found in the region of Churchill, Manitoba (Oosting & Parshall, 1978(80), Ecological notes on the butterflies of the Churchill region of northern Manitoba, J. Res. Lepid. 17(3): 188-203), the authors misquoted a statement that I made about the behavior of *Colias hecla* Lefebvre in an earlier paper (Ferris, 1974, Notes on arctic and subarctic collecting, J. Res. Lepid. 13(4): 249-264). I would like to correct this situation, and offer some additional comments about the behavior of this butterfly.

With reference to the paper cited above, Oosting and Parshall have stated: "The authors have found no records of this butterfly from the taiga zone. Ferris (1974, p. 257) misquotes Masters (1971, p. 8) when reporting the occurrence of *hecla* below treeline." The statement that I made concerning the habitat of *hecla* was based upon my own collecting experience at Churchill in 1973. Specifically, I stated: "When they first appear on the wing, *Colias nastes* and *hecla* can be found a mile or more into the Taiga, along the railroad right-of-way (cf. Masters, 1971, p. 8)." Apparently Oosting and Parshall misinterpreted the abbreviation cf., meaning compare. In this case, compare with Masters (1971) who stated: "*Colias hecla* is quite rare at Churchill, but is apparently a breeding resident there. As far as I know (I have not personally taken the species) all of the examples taken have been taken over climax high tundra." (Masters, 1971, The butterflies of Churchill, Manitoba, The Mid-con. Lepid. Ser. 2(25): 1-13.)

In 1973 at Churchill, I collected *C. nastes moina* Strecker first in the taiga well south of Dene village, and later, as the season progressed, in the climax tundra. My only captures of *C. hecla hecla* Strecker were in the taiga in open clearings. I departed Churchill in mid-July, apparently before *hecla* appeared over the climax tundra. In addition to apparent habitat preferences, there are phenotypic differences in *C. hecla* at Churchill which I have reported in another paper that discusses the taxonomy of *C. hecla* (Ferris, 1981, Revision of North American *Colias hecla* Lefebvre (Pieridae: Coliadinae), Bull. Allyn Mus. Entomol. *In press.*)

I have also collected *C. hecla* in British Columbia and Alaska, and have accurate records from the Yukon Territory and other arctic regions. In British Columbia, *hecla* can be taken in open clearings in forested areas (taiga) along the Alaska Highway. It shows a definite preference for the World War II emergency airstrips, now overgrown with low vegetation. It occurs in similar areas in the vicinity of Kluane Lake and Haines Junction, Yukon Territory.

My experience with *C. hecla* in Alaska has been at Murphy Dome (NW of Fairbanks), McKinley Park, and Eagle Summit (ca. 110 miles (68 km) N. of Fairbanks on the Steese Highway). Murphy Dome is above treeline and the "alba" female form of *hecla* may be taken there. The only *hecla* that I observed in McKinley Park were flying over tundra (above treeline). At Eagle Summit, *hecla* was collected in the forested area below and to the north of the Summit proper. Above-and-below treeline habitats are common in Alaska for several butterfly species, including: *Oeneis jutta* ssp., *Clossiana chariclea* ssp., *Clossiana polaris* ssp. and *Clossiana freija* ssp.

From my experience with many species of arctic and arctic-alpine butterflies, flight patterns sometimes vary annually with certain species. This perhaps accounts for the reason that I found *C. hecla* in the taiga at Churchill, while Oosting and

Parshall did not.

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Further migrations of *Hipparchia semele* (L.) in 1976 and 1980

A substantial migration of the Grayling, *Hipparchia semele* (L.) was reported in France in the autumn of 1975 (*J. Res. Lepid.* 15(2): 83-91, 1976). Since then two other migrations of *H. semele* have been seen, one in the autumn of 1976 and the second in 1980. There were no movements of butterflies during the other years.

No quantitative results are available for the migration of 1976 which happened in early September in the same place, that is at the French address above. The migration of 1980 occurred a little earlier in the same locality and was seen to be in motion a few days before the following results were collected by one of us (P.D.) on the 29th of August. The following day an outbreak of stormy weather prevailed and persisted until the 7th of September when there was a feeble resumption of the migratory stream.

**Table I**  
**Number of Butterflies Passing a Transect**

Time	Number of Butterflies Seen Every 5 Minutes	Total
1000 - 1100	7, 12, 14, (-), 8, 19, 17, 22, 23, 20, 24, (-)	166
1100 - 1200	21, 22, 25, 19, 15, 24, 27, 26, 29, 19, (-), (-)	227
1230 - 1330	20, 22, 19, 24, 27, 24, 23, 26, 24, 27, 20, (-)	256
1330 - 1430	22, 19, 20, 18, 16, 20, 15, 13, 10, 12, 7, 5	177
1430 - 1530	9, 6, 5, 8, 10, 4, 6, 3, 2, 0, 1, (-)	54
<b>Grand Total</b>		<b>880</b>

(Methods as described in 1976 paper, (-) = not recorded)

The results show that there was a peak of flight activity between 1100 - 1300 with a maximum of 29 butterflies recorded during one five minute period. In 1975 no such clear maximum was apparent.

The numbers of butterflies on migration in 1975 and 1980 were equally impressive, 596 seen during four hours in 1975 and 880 seen in five hours in 1980.

It is interesting to note that *H. semele* was migrating with dragonflies which apparently move in this southeast direction every year at the end of August.

In conclusion we would like to say that the migration of *H. semele* appears to be a fairly regular occurrence in this region and has been recorded in three out of six years.

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